

FOREIGN CLAIMS AND ABSTRACT:

1. An optical apparatus, comprising:
a reflective liquid crystal (LC) panel including a twisted-nematic (TN) LC material, wherein one mode of the material includes a 90 degree twist (90TN0); and
at least one optical device.
2. An optical apparatus as recited in claim 1, wherein optical apparatus is an optical projection system.
3. An optical apparatus as recited in claim 2, wherein the optical projection system is a color sequential LC projection system.
4. An optical apparatus as recited in claim 1, wherein the optical apparatus includes no optical compensators in optical connection with the LC panel.
5. An optical apparatus as recited in claim 4, wherein the optical compensators include optical retarders.
6. An optical apparatus as recited in claim 5, wherein the optical retarder is a polarizer.
7. An optical apparatus as recited in claim 3, wherein the color sequential LC projection system includes a polarizing beam splitter, a light source adapted to project red, blue and green light, and projection optics.
8. An optical system as recited in claim 1, wherein the LC panel provides a contrast of at least approximately 1000:1.

9. An optical system as recited in claim 1, wherein the LC panel provides a contrast ratio of approximately 1200:1 for red light, approximately 2200:1 for green light, and approximately 1150:1 for blue light.
10. A reflective liquid crystal (LC) panel, comprising a twisted-nematic (TN) LC material, wherein the mode of the LC device is a 90 degree twist (90TN0).
11. A reflective LC panel as recited in claim 10, wherein the LC panel provides a contrast of at least approximately 1000:1.
12. A reflective LC panel as recited in claim 10, wherein the TN LC panel provides a contrast ratio of approximately 1200:1 for red light, approximately 2200:1 for green light, and approximately 1150:1 for blue light.
13. A reflective LC panel as recited in claim 10, wherein the LC material has a thickness in the range of approximately 1000 nm to approximately 1350 nm.
14. A method of transmitting light selectively from a light source to a projection system, the method comprising:
 - providing a reflective liquid crystal (LC) panel including a twisted-nematic (TN) LC material, wherein one mode includes a 90 degree twist (90TN0).
15. A method as recited in claim 14, wherein an optical compensator is not provided.
16. A method as recited in claim 14, wherein the method includes providing a on-state electric field and an off-state electric field to the LC material to selectively alter the orientation of molecules of the LC material.
17. A method as recited in claim 16, wherein light incident on a first surface of the LC panel that is polarized parallel to the orientation of the molecules emerges in an orthogonal state of

polarization to the incident light in the off state, and in a parallel state of polarization to the incident light in the off state.

18. A method as recited in claim 17, wherein the incident light is linearly polarized.

19. A method as recited in claim 17, wherein the light that emerges from the LC panel is linearly polarized.